Chapter Two

Total National Estimates of SDWA Costs

Two organizations provide engineering-based estimates of the total cost of meeting federal requirements for safe drinking water: the Environmental Protection Agency and the American Water Works Association (AWWA), a group of major suppliers of drinking water. The EPA estimates that water systems will spend $1.4 billion a year to comply with existing Safe Drinking Water Act rules that go beyond preexisting voluntary guidelines. The AWWA estimates that same cost to be $2.3 billion per year. If proposed rules are passed in their current form, those costs could increase substantially. In fact, the total cost of treating water according to SDWA standards would eventually triple based on the EPA's cost estimates and more than quadruple based on the AWWA's estimates.

Limitations on Data

A primary limitation of the engineering-based estimates of costs provided by the EPA and the AWWA is that they generally reflect total--not incremental--costs. That is, some water systems that do not currently meet a standard would choose to treat their water even without the regulation, and the EPA and AWWA data do not reflect that outcome. Similarly, they do not deduct monitoring costs for communities that would have chosen to test for regulated contaminants without federal requirements.

The second major drawback to engineering-based models is that they are founded on numerous assumptions. The accuracy of the estimates depends on the realism of the modeling and the validity of those assumptions, which include the following:

- The occurrence of contaminants and the type of water system in which they exist (surface water or groundwater, large or small).
- The actual number of treatment units. Information is available on the number of water systems in the United States. However, some systems have multiple treatment units, and estimates of the total number of treatment units differ.
- The treatment technologies that water systems would choose. The type of treatment that a community ultimately chooses will depend on numerous factors, including the characteristics of its source water, the treatment equipment that is currently in place, and the availability of land.
- The cost of purchasing and operating given technologies. Large variations in cost may occur as a result of many factors, including operator capability, availability of financing, and the cost of labor and land.
- The cost of monitoring water quality. Actual monitoring costs will vary based on the number

of waivers granted, local laboratory costs, and the analytic methods used.

Engineering-based cost estimates may ultimately prove to be quite different from the costs that specific water systems incur to treat their drinking water according to the level of federal standards. Nevertheless, by making assumptions about how communities will respond to a regulation, engineering analyses can provide some understanding of the cost of a regulation as it is being developed.

Total Cost Estimates for Existing and Proposed Rules

Both the EPA and the AWWA have recently published engineering-based estimates of the total annual cost of treating drinking water according to federal standards specified by the Safe Drinking Water Act. The EPA estimates that water systems will spend $1.4 billion per year to comply with existing standards, and the AWWA estimates that water systems will spend $4.1 billion (see Table 1). The AWWA's estimate is built on EPA data on the occurrence of contaminants, choice of technology, and unit treatment costs. Its estimate is higher than the EPA's for two main reasons. First, the AWWA uses different assumptions about the number of treatment units. Second, its estimate includes the cost of complying with some standards that the EPA excludes--specifically some of the Phase II standards.

The EPA issued the Phase II Rule after the Congress passed the 1986 amendments to the SDWA. Many of the standards set under that rule merely formalized (or sometimes strengthened) standards that existed earlier--first under the standards established by the Public Health Service in 1962 and then under the interim rules issued by the EPA in 1976. Because those standards had been in effect for a long time, the EPA assumed that most water systems were already complying with them before the Phase II Rule was promulgated.[1] Therefore, in estimating the cost of the rule, the agency included only the additional cost that the rule imposed--that is, the cost resulting from standards that were strengthened. The AWWA, however, included the full cost of meeting all of the Phase II standards. If the AWWA's estimate of the total cost of all existing rules was adjusted to include only the additional cost of the Phase II regulations, it would drop to $2.3 billion--approximately 60 percent more than the EPA's total cost estimate.

The primary reason for the difference between those two estimates is alternative assumptions about the number of treatment units. If the AWWA had developed its own assumptions about the technologies that would be chosen and the cost of purchasing and operating those technologies, then the divergence between the two estimates could be much greater.

If the EPA's assumption that systems were complying with voluntary rules (or would have eventually done so on their own) is correct, the practice of excluding the relevant portion of the costs of the Phase II Rule from the estimate of the cost of the SDWA is consistent with the notion of identifying an incremental cost. Consequently, the Congressional Budget Office attaches more significance to the AWWA's $2.3 billion per year estimate than to its $4.1 billion per year estimate. Except for the portion of the Phase II regulations, the EPA's cost estimates do not deduct the cost of actions that water systems might undertake on their own. As a result, $1.4 billion to $2.3 billion per year should be viewed as a range of estimates of the total cost that water systems will bear to comply with SDWA regulations that went beyond pre-SDWA standards. The incremental cost of those regulations could be substantially less, but it cannot be estimated.

In addition to estimating the cost of treating water to the standards required by the existing rules discussed above, the EPA has also published estimates of the total cost of four proposed rules. The proposed rules are for radionuclides, disinfectants and disinfection by-products, enhanced surface water treatment, and sulfate. Adopting those rules in their current form could more than double or triple the esti-

1. However, the belief that many water systems were not meeting those standards was one of the factors that led to the passage of the SDWA in 1974 (see the statement of Robert W. Fri, Deputy Administrator, Environmental Protection Agency, before the Subcommittee on Public Health and Environment of the House Committee on Interstate and Foreign Commerce, March 8, 1973).

Table 1.
Annual Cost of Treatment According to Standards Specified by the Safe Drinking Water Act (In millions of 1992 dollars)

	EPA	AWWA
Existing Rules		
Fluoride	7.5	8.7
Phase I (VOCs)	63.4	98.9
Surface Water Treatment Rule	549.1	918.0
Total Chloriform Monitoring	139.5	142.5
Phase II SOCs	106.4	a
Phase II IOCs	15.2	2,081.3[a]
Lead and Copper	503.9	780.2
Phase V SOCs and IOCs	46.1	69.4
All Existing Rules	1,431.1	4,099.0[b]
Proposed Rules		
Radionuclides		
Radon	280	1,917
Radium-226	48.6	n.a.
Radium-228	8.7	n.a.
Adjusted gross alpha emitters	53.4	n.a.
Uranium	80.7	n.a.
Disinfectants/Disinfection By-Product (D/DBP) Rule		
Stage I	1,064	n.a.[c]
Stage II (Large systems only)[d]	1,820	n.a.[c]
Stage II (All systems)[e]	2,631	n.a.[c]
Enhanced Surface Water Treatment Rule		
Interim rule (Large systems only)[f]		
Based on Stage I D/DBP	402	n.a.[c]
Based on Stage II D/DBP	746	n.a.[c]
Long-term rule (All systems)		
Based on Stage I D/DBP	519	n.a.[c]
Based on Stage II D/DBP (All systems)	927	n.a.[c]
Sulfate	80	n.a.

SOURCE: Congressional Budget Office based on data from the Environmental Protection Agency and American Water Works Association.

NOTES: Costs listed are the estimated compliance cost when rules are in effect. All the existing rules are expected to be in effect in 1995. EPA = Environmental Protection Agency; AWWA = American Water Works Association; VOCs = volatile organic compounds; SOCs = synthetic organic compounds; IOCs = inorganic compounds; n.a. = not available.

a. The AWWA does not provide individual estimates of the Phase II SOCs and IOCs. Those two costs are combined. Furthermore, the AWWA estimate includes the total cost of complying with Phase II requirements, and the EPA estimate includes only the additional cost (because of increased stringency over interim rules). The AWWA estimate of the additional cost of the Phase II requirements is $255.9 million.

b. If only the additional cost of the Phase II requirements is included, the AWWA total estimate is reduced to $2,273.6 million.

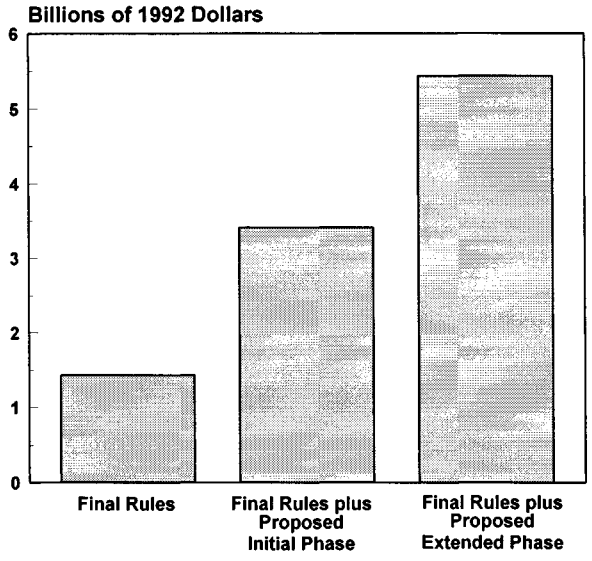
c. The D/DBP rule and the Enhanced Surface Water Treatment Rule were proposed under a negotiated rule-making process. The EPA cost estimates, therefore, represent consensus numbers, and industry has not published independent estimates.

d. Proposed Stage II covers systems serving more than 10,000 people. Costs listed include Stage I costs.

e. Extended Stage II covers all systems. Costs listed include Stage I costs.

f. The proposed interim rule covers systems serving more than 10,000 people.

Figure 2.
EPA's Estimate of the Annual Costs of Complying with Final and Proposed Rules Under the Safe Drinking Water Act



SOURCE: Congressional Budget Office calculations based on data from the Environmental Protection Agency.

NOTE: The proposed initial phase comprises the cost of the proposed rules in their initial stage. It takes in the radon rule, Stage I of the rule for disinfectants and disinfection by-products (D/DBP), and the rule for enhanced surface water treatment (ESWT) for large systems only. The proposed extended phase comprises the cost of the proposed rules once they are extended. It takes in the radon rule, Stage II of the D/DBP rule for all systems, and the ESWT rule for all systems.

mated cost of treating drinking water according to the SDWA-specified standards (see Figure 2). Note, however, that those rules could change significantly before they are completed. In addition, the SDWA requires the EPA to regulate 25 additional contaminants every three years.

The AWWA projects substantially higher costs for one of the proposed radionuclides--radon--than the EPA does. The AWWA has estimated that the proposed standard for radon will cost $1.9 billion in 1992 dollars.[2] EPA has estimated the annual cost to be $280 million in 1992 dollars. Differences in assumptions about unit treatment costs are the primary source of the difference in cost estimates.[3] If the AWWA's cost estimates for radon are used, the proposed rules would increase the cost of treating drinking water more than threefold in the proposed initial stage and nearly fivefold in the proposed extended stage.[4]

2. RCG/Hagler Bailly, *Estimating the National Costs of Compliance with Drinking Water Regulations: A Users Guide and Research Protocol*, prepared for the American Water Works Association (Boulder, Colo.: RCG/Hagler Bailly, February 1995), p. 10.

3. RCG/Hagler Bailly, *The Cost of Compliance with the Proposed Federal Drinking Water Standards for Radionuclides*, prepared for the American Water Works Association (Boulder, Colo.: RCG/Hagler Bailly, October 1991), p. 6-2.

4. This estimate is based on a comparison with the EPA's estimate of the cost of the existing rules.

Chapter Three

Household Costs of Drinking Water Treatment

Estimates of total national costs of treating drinking water are useful, but it is also important to understand how those costs affect individual households. Using available data from the Environmental Protection Agency, the Congressional Budget Office estimated the percentage of households that are expected to fall into different categories of average annual costs. In addition, CBO analyzed available survey data on expenditures that municipalities made to comply with the Safe Drinking Water Act.

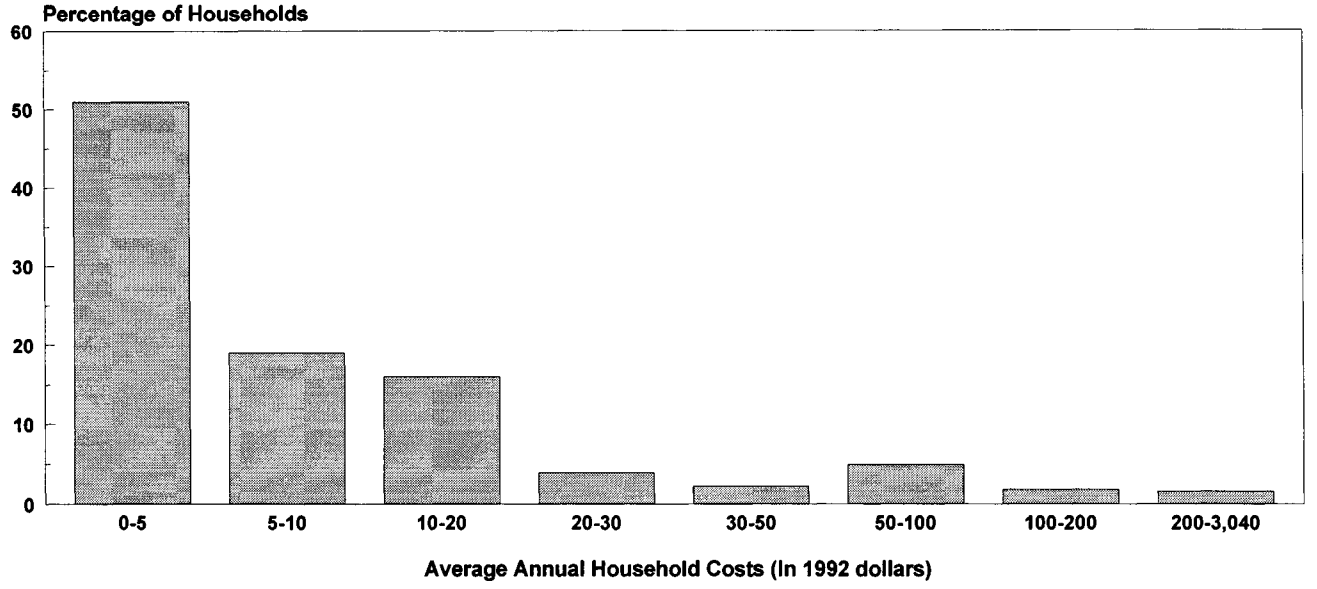
Both the EPA data and the municipal expenditure data revealed similar results. Over 80 percent of households are expected to incur relatively modest costs--less than $20 per year--to treat drinking water according to the existing standards specified by the SDWA. Furthermore, a comparison of actual expenditures of municipalities with the EPA's estimates for systems serving more than 10,000 people did not reveal evidence that the EPA has greatly underestimated the actual cost of treatment. That comparison, however, is limited, since the survey on municipal expenditures was not designed to be representative at the national level.

Although most households are expected to have modest costs, some households could have much greater costs--some in excess of $100 per year. The households most likely to face such high costs are ones that are served by small systems in need of treatment. Finally, though per-household costs are currently modest, they could rise significantly under the proposed rules. Like the existing rules, the proposed rules are most likely to impose high average household costs on small systems.

EPA Data on Costs at the Household Level

Understanding the costs of mandates at the national level, though important, provides little insight into how households in communities of different sizes and with different types of water systems might be affected. Using data provided by the EPA, CBO grouped households according to categories of potential annual drinking water treatment and monitoring costs (see Figure 3). Although those data reflect the EPA's expectations about the variation and range of potential costs, the data are highly speculative. They are based on numerous assumptions (described in Chapter 2) and may ultimately prove to be quite different from actual costs. In addition, those costs reflect the total cost of treating drinking water according to the standards specified by the SDWA and do not reflect the incremental cost of the SDWA. In other words, the costs are not net of the cost of treatment measures that communities would have chosen to undertake in the absence of federal standards. Finally, they are based on the assumption that all existing systems comply with the regulations. In reality, some small systems may choose to merge with larger

Figure 3.
Distribution of Households by EPA Estimates of the Cost of Monitoring and Treating Drinking Water According to Existing SDWA Standards



SOURCE: Congressional Budget Office calculations based on data from the Environmental Protection Agency.

NOTE: EPA = Environmental Protection Agency; SDWA = Safe Drinking Water Act.

systems rather than undertake costly treatment (see the discussion of restructuring in Chapter 5).

Nearly 70 percent of households would be expected to have a cost of less than $10 per year as a result of monitoring and treating drinking water according to the standards specified by the existing rules of the SDWA; 86 percent would be expected to incur a cost of less than $20 per year. Less than 4 percent of the households would be expected to incur a cost of more than $100 per year, and less than 1 percent could have costs greater than $300 per year.[1] Those costs can be compared with an average expenditure for drinking water of $352 per household in 1991.[2] Therefore, treatment is a relatively small component of total expenditures for drinking water for most households.

Although the EPA data suggest that the great majority of households would have a cost of less than $20 dollars a year, they also show that some water systems could incur substantial costs to meet the standards specified in the SDWA. Households with the highest compliance costs tend to be those served by small water systems that need one or more types of treatment. As indicated in Table 2 on pages 16 and 17, the compliance cost for the average household generally decreases significantly as the size of the system increases for a given number of treatments and type of system (surface or ground). For example, groundwater systems that serve from 25 to 100 people and require two types of treatment are predicted to have an average household cost of $984. That average cost falls to $337 for groundwater sys-

1. In calculating these costs, capital equipment was annualized over a 20-year period at a 7 percent interest rate. Monitoring costs were averaged over an 18-year period. Actual monitoring costs will be much higher in initial years than in later years. As discussed above, the cost of meeting only a subset of the Phase II standards is included. The EPA assumes that most water systems were already complying with the voluntary public health guidelines that preceded passage of the SDWA. The costs therefore do not include the cost of meeting the share of the Phase II standards that merely codified those guidelines.

2. This average expenditure is based on Bureau of the Census data. See the discussion in Chapter 1.

tems that serve from 100 to 500 people and also require two treatments.

In addition, per-household costs tend to be higher for surface water systems than for groundwater systems. For instance, a groundwater system in the smallest-sized category that needs one type of treatment is expected to have an average cost of $338. A surface water system in the same size category that also needs one treatment is expected to have an average cost of $577.

As Table 2 also reveals, a very small percentage of the population is expected to fall into the highest categories for average household costs. For instance, 0.01 percent of the population is served by a surface water system that requires two types of treatment and is expected to incur an average household cost of $1,087.

Nevertheless, household costs, as shown in Figure 3 and Table 2, could increase significantly if the proposed regulations were to go into effect. CBO used information available from EPA documents to develop estimates of the average per-household costs for affected systems under three of the proposed rules for categories of different system sizes (see Table 3 on pages 18 and 19). All three of the proposed rules tend to impose higher average per-household costs on small communities than on large communities. In general, the percentage of the population that falls into categories for very high compliance costs is fairly small for each rule but not insignificant. Of the population served by community water systems, 3 percent are expected to require treatment under the Disinfectants/Disinfection By-Product (D/DBP) Rule and are served by systems in which the average cost of treatment per household for that rule exceeds $100. Note that the full range of actual costs associated with the proposed rules will be greater than the range of average costs for affected systems in each size category.[3] In addition, actual costs may differ from the EPA's estimates.

Preferably, the cumulative cost of the existing and proposed rules for individual systems should be examined. For example, are the specific systems that are expected to incur high average per-household costs under the existing rules also expected to incur high costs under the proposed rules, or are those that are likely to have high costs under the D/DBP rule also likely to have high costs under the Enhanced Surface Water Treatment (ESWT) Rule or the radon rule? If systems are likely to incur high costs under multiple rules, would one type of treatment technology be able to address both problems? EPA does not currently have that type of information. Therefore, the cumulative cost of existing and proposed rules cannot be examined, and the full financial impact of existing and proposed rules on individual systems is unknown.

3. EPA documents do not provide sufficient data to indicate the full range of costs estimated for the proposed rules (analogous to the full range of costs for existing rules shown in Figure 5 on page 23).

Survey Data on Local Costs

In an attempt to draw attention to the cost of unfunded federal mandates, the U.S. Conference of Mayors and the National Association of Counties each commissioned Price Waterhouse to survey their members about their total costs for complying with such requirements. Most of the mandates that cities and counties were asked about were environmental ones. (See Figure 4 on page 20 for a list of the mandates that the surveys covered.) CBO obtained those survey results (referred to here as the municipal expenditure survey) and analyzed the expenditures that cities and counties reported for 1993 and 1997 as necessary to meet the standards specified by the SDWA.

The Data: Quality Control and Limitations

The municipal expenditure survey asked cities and counties to report the expenditures they had made in fiscal year 1993 to comply with each of the existing rules (listed in Box 1) and an "other" mandate category. (Some cities and counties listed their costs for proposed rules or for testing or research in the "other" category.) In addition, the survey asked both cities and counties to report the total expenditures that they expected to make to comply with each existing rule for five additional years--1994 through

Table 2.
Average Household Cost for Monitoring and Compliance, by Size of System and Number of Treatments (In 1992 dollars)

	Groundwater				Surface Water			
	No Treatment[a]	1 Treatment	2 Treatments	3 Treatments	No Treatment[a]	1 Treatment	2 Treatments	3 Treatments
25 to 100 People								
Compliance Cost	171	338	984	1,194	171	577	1,087	2,402
Percentage of Systems[b]	18.47	21.22	2.43	0.02	0.15	0.64	0.64	0.03
Percentage of Population[c]	0.37	0.42	0.05	d	d	0.01	0.01	d
100 to 500 People								
Compliance Cost	45	91	337	437	45	291	467	1,009
Percentage of Systems[b]	10.26	14.62	1.51	0.01	0.26	0.61	0.36	0.01
Percentage of Population[c]	0.86	1.22	0.13	d	0.03	0.06	0.04	d
500 to 1,000 People								
Compliance Cost	18	39	144	189	18	340	225	458
Percentage of Systems[b]	3.10	4.85	0.50	d	0.02	0.42	0.59	0.01
Percentage of Population[c]	0.78	1.22	0.12	d	d	0.11	0.15	d
1,000 to 3,300 People								
Compliance Cost	8	21	84	n.a.	9	22	130	306
Percentage of Systems[b]	3.13	3.90	0.36	n.a.	0.03	0.62	0.67	0.02
Percentage of Population[c]	1.98	2.47	0.23	n.a.	0.02	0.42	0.45	0.01
3,300 to 10,000 People								
Compliance Cost	4	16	50	n.a.	4	33	90	188
Percentage of Systems[b]	1.48	1.62	0.14	n.a.	0.17	0.74	0.66	0.02
Percentage of Population[c]	2.93	3.22	0.28	n.a.	0.36	1.52	1.36	0.05
10,000 to 25,000 People								
Compliance Cost	2	13	38	n.a.	2	30	42	143
Percentage of Systems[b]	0.75	0.35	0.03	n.a.	0.20	0.39	0.17	0.01
Percentage of Population[c]	4.08	1.89	0.15	n.a.	1.09	2.14	0.96	0.04
25,000 to 50,000 People								
Compliance Cost	1	8	n.a.	n.a.	1	19	31	50
Percentage of Systems[b]	0.28	0.11	n.a.	n.a.	0.12	0.23	0.10	d
Percentage of Population[c]	3.46	1.34	n.a.	n.a.	1.41	2.80	1.24	0.03

(Continued)

Table 2.
Continued

	Groundwater				Surface Water			
	No Treatment[a]	1 Treatment	2 Treatments	3 Treatments	No Treatment[a]	1 Treatment	2 Treatments	3 Treatments
50,000 to 75,000 People								
Compliance Cost	1	5	n.a.	n.a.	1	5	21	84
Percentage of Systems[b]	0.02	0.05	n.a.	n.a.	d	0.10	0.11	d
Percentage of Population[c]	0.49	1.09	n.a.	n.a.	0.09	2.02	2.31	0.09
75,000 to 100,000 People								
Compliance Cost	1	4	n.a.	n.a.	1	13	24	n.a.
Percentage of Systems[b]	0	0.02	n.a.	n.a.	d	0.07	0.03	n.a.
Percentage of Population[c]	0.12	0.65	n.a.	n.a.	1.11	2.01	0.90	n.a.
100,000 to 500,000 People								
Compliance Cost	e	4	n.a.	n.a.	e	12	27	154
Percentage of Systems[b]	0.03	0.03	n.a.	n.a.	0	0.12	0.06	d
Percentage of Population[c]	1.80	2.26	n.a.	n.a.	4.22	8.54	3.93	0.20
500,000 to 1 Million People								
Compliance Cost	e	3	n.a.	n.a.	e	5	10	n.a.
Percentage of Systems[b]	d	d	n.a.	n.a.	d	0.03	0.01	n.a.
Percentage of Population[c]	d	0.69	n.a.	n.a.	3.89	6.15	2.27	n.a.
More than 1 Million People								
Compliance Cost	n.a.	n.a.	n.a.	n.a.	e	4	9	n.a.
Percentage of Systems[b]	n.a.	n.a.	n.a.	n.a.	d	0.01	d	n.a.
Percentage of Population[c]	n.a.	n.a.	n.a.	n.a.	4.00	7.00	2.00	n.a.

SOURCE: Congressional Budget Office based on data from the Environmental Protection Agency.

NOTE: n.a. = not applicable (no systems fell into this category).

a. Costs in the no-treatment category represent monitoring costs only.

b. Indicates the percentage of community water systems and nontransient, noncommunity water systems that are expected to fall into this category for average household compliance cost.

c. Indicates the percentage of the population served by community water systems or nontransient, noncommunity water systems that are expected to fall into this category for average household compliance cost.

d. Less than 0.005 percent of the systems or population was expected to fall into these cost categories.

e. Estimated costs for this category were less than $1.

Table 3.
Average Household Cost Under the Proposed Rules by Size of Affected System (In 1992 dollars)

	System Size (People served)					
	25 to 100	100 to 500	500 to 1,000	1,000 to 3,300	3,300 to 10,000	10,000 to 25,000
Disinfectants/Disinfection By-Product Rule						
Average Cost per Household[a]	223	204	199	164	186	57
Percentage of Population[b]	0.02	0.07	0.21	0.69	2.10	2.81
Cumulative Percentage of Population[c]	0.02	0.09	0.30	0.99	3.09	5.91
Enhanced Surface Water Treatment Rule						
Average Cost per Household[a]	445	250	212	72	45	29
Percentage of Population[b]	0.01	0.04	0.16	0.62	2.15	2.91
Cumulative Percentage of Population[c]	0.01	0.05	0.21	0.83	2.98	5.89
Radon Rule						
Average Cost per Household[d]	260	99	47	26	17	15
Percentage of Population[b]	0.30	1.00	0.51	1.15	1.12	1.15
Cumulative Percentage of Population[c]	0.30	1.30	1.81	2.96	4.08	5.24

(Continued)

Table 3.
Continued

	System Size (People served)					
	25,000 to 50,000	50,000 to 75,000	75,000 to 100,000	100,000 to 500,000	500,000 to 1 Million	More than 1 Million
Disinfectants/Disinfection By-Product Rule						
Average Cost per Household[a]	44	40	36	31	27	26
Percentage of Population[b]	3.79	3.11	3.14	10.10	10.30	7.72
Cumulative Percentage of Population[c]	9.70	12.81	15.96	26.06	36.36	44.08
Enhanced Surface Water Treatment Rule						
Average Cost per Household[a]	23	20	17	18	16	15
Percentage of Population[b]	4.07	3.26	3.44	11.11	11.51	7.08
Cumulative Percentage of Population[c]	9.96	13.22	16.66	27.78	39.29	46.37
Radon Rule						
Average Cost per Household[d]	10	9	8	7	87	5
Percentage of Population[b]	0.84	0.38	0.21	0.87	0.30	0.14
Cumulative Percentage of Population[c]	6.08	6.46	6.67	7.54	7.83	7.97

SOURCE: Congressional Budget Office based on data from the Environmental Protection Agency.

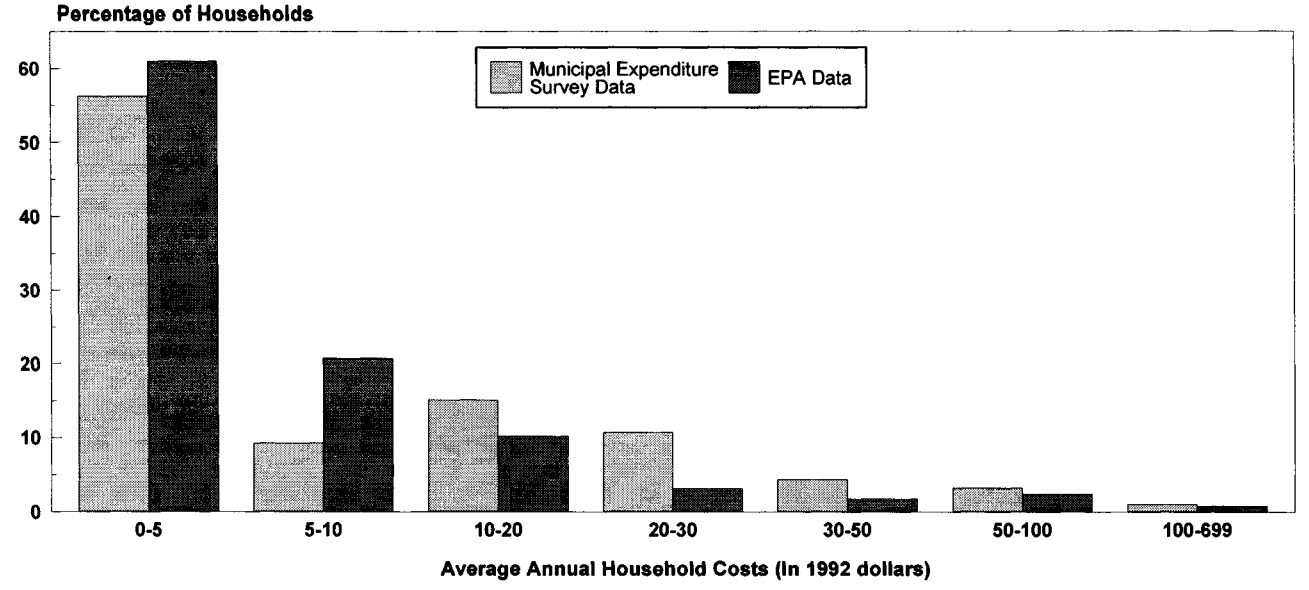
a. Calculated as the total cost for that size category divided by the number of affected systems in the size category divided by the median population in the category multiplied by the average household size (2.6 people). All capital costs were annualized over 20 years using a 7 percent interest rate.

b. Percentage of population that is served by affected systems in that size category.

c. Cumulative percentage of population served by affected systems in the stated size category or smaller-sized categories.

d. Calculated by the EPA based on the average flow per system size category and an assumption of 100,000 gallons used per household per year.

Figure 6.
Distribution of Households by Average Per-Household Cost of Treating Drinking Water According to Existing SDWA Standards: 1997 Municipal Expenditure Survey Data Versus EPA Data



SOURCE: Congressional Budget Office based on data from the Environmental Protection Agency and the municipal expenditure survey commissioned by the U.S. Conference of Mayors and the National Association of Counties.

NOTES: SDWA = Safe Drinking Water Act.

The figure compares EPA data with 1997 data from the municipal expenditure survey for the subset of systems serving more than 10,000 people.

The Results

The 1997 costs reported in the municipal expenditure survey for systems serving more than 10,000 people appear somewhat higher, but not radically different from, the costs indicated by EPA data for like-sized systems (see Figure 6). Based on the municipal expenditure survey, 91 percent of households are expected to incur an average annual cost of less than $30 in 1997, whereas the EPA estimates that 95 percent of households will have costs of less than $30. Moreover, 66 percent of households would incur annual costs of less than $10 based on municipal expenditure data as opposed to 82 percent based on EPA data.

The available data do not provide evidence of any extreme differences in local and national estimates of the total cost of treating drinking water. That observation, however, must be balanced by a recognition of the considerable limitations of the municipal expenditure data, particularly that the survey was not designed to be representative at the national level.